REMARKS

This application is believed to be in condition for allowance at the time of the next Official Action.

The Official Action rejects claims 1, 3, 5, 6, and 11-16 under 35 USC §103(a) as being anticipated by GALLAGHER et al. Reconsideration and withdrawal of this rejection are respectfully requested for the following reasons:

The Official Action identifies those elements of the GALLAGHER et al. device and method that are interpreted as meeting the features of the rejected claims. The Official Action draws particular attention to Figure 8D of GALLAGHER et al.

Applicants note that Figure 8D represents an interim step in the manufacturing process illustrated in the sequence of Figures 8A-8H. Accordingly, the structure illustrated in Figure 8D is not a magnetic memory, as the present claim recites, and as the Advisory Action of April 2, 2008 asserts.

The structure of GALLAGHER et al. Figure 8D lacks, at the very least, any possible way to make electrical contact with electrode stack 30 (sub-elements 32 and 34). While such element is available for electrical contact in subsequent steps 8E, 8G, and 8H, the entire resist pattern 90 is also absent in those steps.

Accordingly, in Figure 8D there is no way to make electrical contact with electrode stack 30, hence the device of Figure 8D cannot be a magnetic memory device. A device is fairly

characterized as a memory device if it is capable of having data stored therein. With no way to make contact, the device cannot have data stored therein, and therefore cannot reasonably be characterized as a memory device.

The structure of Figure 8D is nothing more than a collection of materials which, if subjected to the method steps illustrated in Figures 8E-8G, might ultimately produce a magnetic memory. For at least this reason, neither the device identified by the Official Action nor any other structure disclosed by GALLAGHER et al. meets all of the features of the rejected claims, and the rejection necessarily fails for at least this reason.

Moreover, among the features recited in rejected claim 1 is a sidewall insulating film. The Official Action reads this claimed feature on element 90 of the interim GALLAGHER et al. structure of Figure 8D.

In stark contrast to the Official Action's characterization of element 90 of GALLAGHER et al., the reference itself describes such element in column 10, lines 23-26: "A second resist pattern 90 is then put on the wafer to allow for Ar ion milling removal of selected regions of tunnel barrier 20 and base electrode stack 10, which are not protected by the resist."

Clearly, element 90 is <u>not</u> a sidewall insulating film. Rather, it is merely a resist pattern, which exists only temporarily during the manufacturing process to protect portions

of the device that are meant to keep the layers of tunnel barrier 20 and base electrode stack 10.

As is evident from Figure 8E representing the immediately following step, resist pattern 90 is removed once the ion milling step is complete. Accordingly, resist pattern 90 does not remain part of the element in its final form, and therefore cannot operate as, nor can it reasonably be characterized as, a sidewall insulating film.

The analysis provided above applies equally to independent method claim 12. The resist pattern 90 cannot be characterized as the recited sidewall insulating film, as the resist pattern exists only temporarily during a single step of the manufacturing process described by GALLAGHER et al.

For at least these reasons, the GALLAGHER et al. reference cannot reasonably be interpreted as anticipating independent claims 1 and 12 and, by extension, the rejected claims that depend therefrom.

The Official Action rejects claim 7 under 35 USC §103(a) as being unpatentable over GALLAGHER in view of BHATTACHARYYA et al. Reconsideration and withdrawal of this rejection are respectfully requested for the following reasons.

Rejected claim 7 depends directly from independent apparatus claim 1. The Official Action offers the further BHATTACHARYYA et al. reference merely for its asserted teaching or suggestion of a distance d at a plane between an outer

circumference of the top of the lower portion structure and an outer circumference and a top of the upper portion structure of the magnetic element within a particularly recited range.

However, irrespective of the ability of this reference to teach or suggest that for which it is specifically offered, it nonetheless fails to overcome the shortcomings of the primary GALLAHGER reference. Accordingly, the combination of references necessarily fails to render obvious the totality of features recited by the combination of claims 1 and 7. Reconsideration and withdrawal of this rejection are therefore respectfully requested.

The Advisory Action specifically states that each of claims 8, 9, 19, and 20 are allowable but for their dependence from rejected base claims 1 and 12. In light of the analysis provided above as to claims 1 and 12, applicants believe that these claims should now be in condition for allowance.

The Official Action rejects claim 10 under 35 USC §103(a) as being unpatentable over GALLAGHER in view of DURLAM et al. Reconsideration and withdrawal of this rejection are respectfully requested for the following reasons:

The Official Action offers the DURLAM et al. reference for its asserted teaching or suggestion of the sidewall insulating film being formed of at least one of metal nitride, metal oxide, and metal carbide. However, the combination of references still fails to teach or suggest the full set of

features recited in claim 10 by virtue of its dependence from claim 1. Reconsideration and withdrawal of this rejection are therefore respectfully requested.

The Official Action rejects claims 17 and 18 under 35 USC §103(a) as being unpatentable over GALLAGHER in view of YOSHIDA et al. Reconsideration and withdrawal of this rejection are respectfully requested for the following reasons:

The Official Action offers the YOSHIDA reference for its asserted teaching or suggestion of the etching of a multilayer film using reactive ion etching. The YOSHIDA reference, however, still fails to overcome the shortcomings of the primary GALLAGHER reference, and reconsideration and withdrawal of this rejection are therefore respectfully requested.

In addition to the analysis provide above, applicants have amended existing claims and added new claims. Applicants have amended each of allowable claims 9, 19, and 20. The second paragraph of allowable claim 9 has been deleted, and added as new claim 21 that depends from amended claim 9. Accordingly, claims 9 and 21 together recite the features of allowable claim 9.

Applicants suggest that even if the rejection of claim 1 is maintained, the allowability of claim 9 should be preserved. None of the references of record recite the interlayer insulating film formed to cover the lower portion structure of the magnetic

element and the sidewall insulating film, as still recited in claim 9.

Allowable claim 19 recited an interlayer forming step, a via hole forming step, and characteristics of the sidewall insulating film. Applicants have amended claim 19 in a manner corresponding to that of claim 9, namely to recite only those features related to the interlayer insulating film. In light of the failure of the prior art to teach this feature in the context of a method as well as that of a structure, this claim should be allowable even if claim 12 is not.

New claim 22 depends from amended claim 19 and recites the step of forming a via-hole deleted from claim 19. Claim 23 depends from claim 22 and recites the sidewall characteristic deleted from claim 19. Accordingly, claim 23 has a scope the same as that of claim 19 prior to the present amendment.

New claims 24 and 25 recite a further element and step, respectively, related to a wiring layer that is in electrical contact with an upper surface of the upper portion. Such wiring layer is illustrated at least in present Figures 2F, 3F, 4F, 5E, 6G, and 7F.

Applicants note that the GALLAGHER et al. device ultimately includes a wiring layer 50, as illustrated in Figure 8H of GALLAGHER et al. However, while the structure of GALLAGHER et al. Figure 8H might be properly construed as a magnetic memory, in such form it lacks the sidewall insulating film

surrounding the upper portion structure, with the lower portion structure having an outer circumference that is the same as an outer circumference of the bottom of the sidewall insulating film. Moreover, the illustration of the manufacturing step of 8D cannot be combined with the illustration of the manufacturing step of Figure 8H of GALLAGHER et al., as they represent two different points in a single manufacturing process, and therefore do not combine to produce a new structure.

Accordingly, regardless of the disposition of claims 1 and 12, claims 24 and 25 should be allowable by virtue of their recitations regarding the wiring layer in contact with the upper surface of the upper portion with a sidewall insulating film in place.

In light of the amendments provided above and arguments offered in support thereof, applicants believe the present application is in condition for allowance and an early indication of the same is respectfully requested.

If the Examiner has any questions or requires further clarification of any of the above points, the Examiner may contact the undersigned attorney so that this application may continue to be expeditiously advanced.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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